

CLAIMS

- 1           1. A baseband controller system, comprising:  
2           a plurality of buses coupled to communicate with a  
3 plurality of hardware blocks;  
4           a microsequencer also coupled to the plurality of  
5 buses;  
6           the microsequencer comprising a 72-bit correlator/  
7 accumulator; and  
8           transceiver circuitry coupled to at least one of the  
9 plurality of buses.  
10  
11  
12           2. The baseband controller system of claim 1 wherein  
13 the microsequencer further comprises a 72-bit arithmetic  
14 logic unit.  
15  
16  
17           3. The baseband controller system of claim 1 wherein  
18 the microsequencer further comprises a plurality of  
19 temporary registers for storing computational data.  
20  
21  
22           4. The baseband controller system of claim 3 wherein  
23 the temporary registers include a 64-bit register.  
24  
25  
26           5. The baseband controller system of claim 3 wherein  
27 the temporary registers include a 48-bit register.

1           6.    The baseband controller system of claim 3 wherein  
2    the temporary registers include a 32-bit register.

1           7.    The baseband controller system of claim 3 wherein  
2    the temporary registers include a 16-bit register.

1           8.    The baseband controller system of claim 3 wherein  
2    the temporary registers include a 64-bit register, a 48-bit  
3    register, a 32-bit register and a 16-bit register.

1           9.    The baseband controller system of claim 8 further  
2    including logic circuitry to determine which temporary  
3    register should be used to store a piece of computational  
4    data based upon the size of the piece of computational data.

1           10.   The baseband controller system of claim 1 wherein  
2    the microsequencer comprises a plurality of clocks,  
3    including a native Bluetooth clock.

1           11.   The baseband controller system of claim 1 wherein  
2    the microsequencer comprises a plurality of clocks,  
3    including a native real-time clock.

1           12.   The baseband controller system of claim 1 wherein  
2    the microsequencer comprises a plurality of clocks,  
3    including an externally driven Bluetooth clock.

1           13. The baseband controller system of claim 1 wherein  
2 the microsequencer comprises a plurality of clocks,  
3 including an externally driven real-time clock.

1           14. The baseband controller system of claim 1 wherein  
2 the microsequencer comprises a plurality of timers.

15. The baseband controller system of claim 1 wherein  
the microsequencer comprises a plurality of timers wherein  
the plurality of timers comprises at least four timers.

16. The baseband controller system of claim 1 wherein  
the microsequencer includes eight timers.

1           17. A microsequencer for use as a real-time Bluetooth  
2 baseband controller, comprising:  
3           timer circuitry;  
4           temporary data storage circuitry; and  
5           a plurality of Bluetooth and native clocks for  
6 supporting timing functionality according to Bluetooth  
7 specifications.

18. The microsequencer of claim 17 wherein the  
plurality of native and externally driven clocks include an  
externally driven Bluetooth clock.

19. The microsequencer of claim 17 wherein the  
plurality of native and externally driven clocks include a  
native Bluetooth clock.

20. The microsequencer of claim 17 wherein the  
plurality of native and externally driven clocks include an  
external real-time clock.

21. The microsequencer of claim 17 wherein the  
plurality of native and externally driven clocks include a  
native real-time clock.

1           22. The microsequencer of claim 17 wherein the  
2 temporary data storage circuitry includes a 64-bit storage  
3 register.

1           23. The microsequencer of claim 17 wherein the  
2 temporary data storage circuitry includes a 48-bit storage  
3 register.

1           24. The microsequencer of claim 17 wherein the  
2 temporary data storage circuitry includes a 32-bit storage  
3 register.

1           25. The microsequencer of claim 17 wherein the  
2 temporary data storage circuitry includes a 16-bit storage  
3 register.

1           26. The microsequencer of claim 17 wherein the  
2 temporary data storage circuitry includes a 64-bit register,  
3 a 48-bit register, a 32-bit register and a 16-bit register.

1           27. The microsequencer of claim 17 wherein the  
2 temporary data storage circuitry includes registers of  
3 different size and further wherein the microsequencer  
4 includes a data storage logic module, which data storage  
5 logic module determines which available register should be  
6 used for storing data based upon the size of the data that  
7 is to be temporarily stored.

11           28. The microsequencer of claim 17 wherein the timers  
12 include at least four timers.

15           29. The micro-sequencer of claim 17 wherein the timers  
16 include at least eight timers.

19           30. The micro-sequencer of claim 27 further including  
20 timer control logic circuitry for controlling the operation  
21 of the at least eight timers.

1           31. A microsequencer for use as a real-time Bluetooth  
2 baseband controller, comprising:

3           eight timers to provide traditional timer  
4 functionality;

5           timer control logic circuitry;

6           an externally driven Bluetooth clock;

7           an externally driven real-time clock;

8           a native Bluetooth clock;

9           a native real-time clock;

10          a 64-bit register for temporarily storing computational  
11 data;

12          a 48-bit storage register for temporarily storing  
13 computational data;

14          a 32-bit storage register for temporarily storing  
15 computational data;

16          a 16-bit storage register for temporarily storing  
17 computational data; and

18          data storage logic circuitry for determining which of  
19 the temporary storage registers is to store a piece of data  
20 that is to be temporarily stored.

1           32. The microsequencer of claim 31 wherein the period of  
2 one Bluetooth clock cycle is equal to 312.5 real-time clock  
3 cycle periods.